

JAMES CLERK MAXWELL (BORN JUNE 13TH, 1831): THE MAN WHO MODELED LIGHT



A drawing by James' cousin Jemima Wedderburn shows James paddling his floating washtub across the pond away from an unflatteringly portrayed tutor, who is vainly trying to catch him



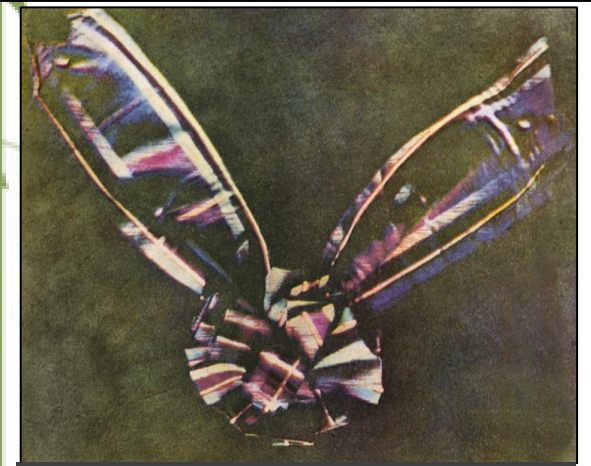
- 1859: Explained composition of Saturn's rings
- 1861: Demonstrated first color photograph of a tartan ribbon
- 1862: Calculated the speed of light as 310,740,000 m/s
- 1865: Published Maxwell's equations first
- 1873: Published "A Treatise on Electricity and Magnetism"

"From a long view of the history of mankind - seen from, say, ten thousand years from now - there can be little doubt that the most significant event of the 19th century will be judged as Maxwell's discovery of the laws of electrodynamics."

- Richard Feynman

"One scientific epoch ended and another began with James Clerk Maxwell."

- Albert Einstein



First colour photograph of a tartan ribbon, 1861



Fig. 83. The Color-top.



Postcard to Tait



A young James Clerk Maxwell holding his colour wheel (Trinity College Library, Cambridge University).

Personal Life

- Born in Edinburgh on 13th of June 1831
- He wed Katherine Mary Dewar in 1858 and never had children
- At 25, became professor of Physics at Aberdeen University's Marischal College
- Set up Cavendish Laboratory in 1874
- He died on 5th November 1879 and is buried in the village of Parton

Did you know?

- Maxwell wrote his first scientific paper at the age of 14!
- A mountain range on Venus, Maxwell Montes, is named in his honour
- Maxwell was a physicist, mathematician and a POET!!
- Maxwell was born at 14 India Street, in Edinburgh

And it came to pass that...



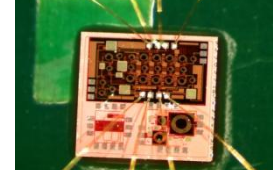

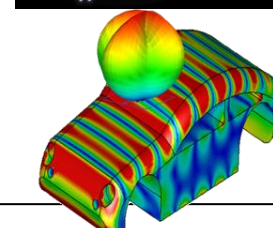
$$\nabla \times \vec{E} = -\frac{\partial \vec{B}}{\partial t}$$

$$\nabla \times \vec{H} = \frac{\partial \vec{D}}{\partial t} + \vec{J}$$

$$\nabla \cdot \vec{D} = \rho$$

$$\nabla \cdot \vec{B} = 0$$

And then there was LIGHT!

- Wireless Power Transfer 
- Antennas 
- RF & Microwave Circuits 
- Optical Communication 
- Computational EM 

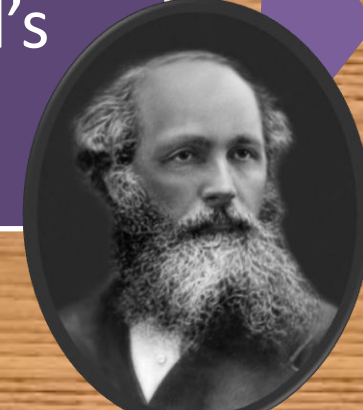
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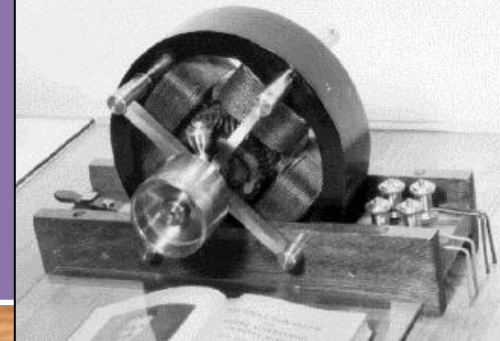
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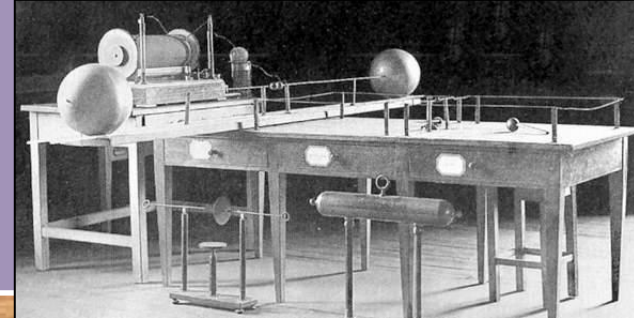
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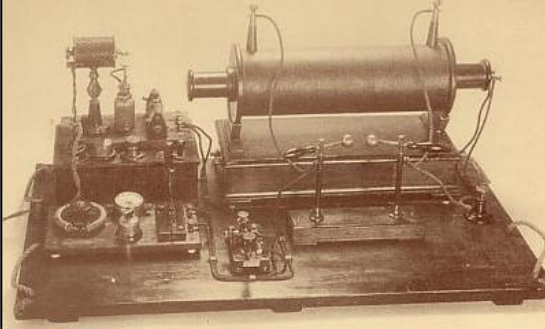
Web: <http://ece.iisc.ernet.in>


1865- Maxwell's Equations Published 

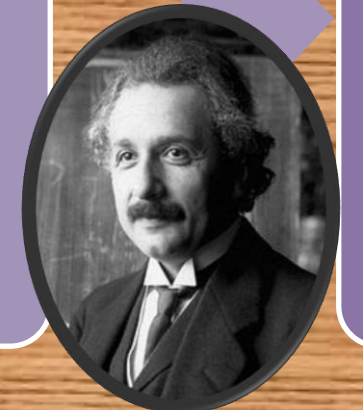
1884-Heaviside reformulates Maxwell's Equations 

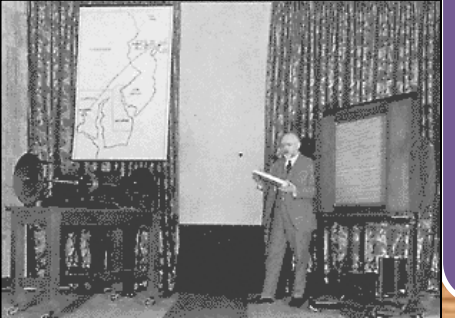
1887- Tesla introduces Alternating Current 

1888- Hertz demonstrates existence of EM waves 

1895- J C Bose's Coherer and Marconi's Transmitter 

1896- Marconi first transmits radio 

1905-Einstein redefines space and time with the Special Theory of Relativity 

1927- Mechanical TV demonstrated by Bell Telephone Labs 

1973- Cooper of Motorola made the first mobile telephone call 